

determining from the packet-related data which destination ports are to receive the packet-related data in the first stage queue;

storing in a second stage queue associated with each determined destination port the packet-related data from the first stage queue based on a characteristic of the packet; and

transmitting the packet-related data in the second state queue to a switch fabric for completing the communication of the data packet from the sending port to each determined destination port.

2. The method of claim 1 wherein the packet-related data is a pointer to memory and a list of destination ports.

3. The method of claim 1 including sending the packet-related from the sending port to the first stage queue.

4. The method of claim 1 wherein the first stage queue includes multiple first queues, and the step of storing the data in the first stage queue comprises storing the data in a specific first queue based on a characteristic of the packet.

5. The method of claim 1 wherein the packet characteristic is priority.

6. The method of claim 1 wherein the packet characteristic is network protocol type.

7. The method of claim 1 wherein the packet characteristic is type of service.

8. The method of claim 1 wherein the packet characteristic is other than whether the packet is a unicast or multicast type.

9. (Amended) The method of claim 1 wherein each second stage queue includes multiple second queues, and the step of storing the data in the second stage queue comprises storing the data in a specific second queue based on the characteristic of the packet.

10. The method of claim 1 wherein the packet-related data is a data packet.

11. The method of claim 1 wherein the switch fabric is a shared memory switch fabric, and the transmitting comprises using the data to obtain a copy of the data packet from the shared memory switch fabric to complete communication of the data packet.

12. The method of claim 1 wherein the switch fabric is a crossbar matrix, and the transmitting comprises using the data to form connections in the matrix so as to communicate simultaneously a copy of the data packet from the sending port to each of the determined destination ports.

13. (Twice Amended) In a switching device, apparatus for communicating data packets from sending ports to destination ports, comprising:

a first stage queue storing packet-related data from a sending port;

a second stage queue associated with each of a set of destination ports storing the packet-related data from the first stage queue based on a characteristic of the packet; and

a switch fabric coupled to the second stage queue, the switch fabric using the packet-related data in the second stage queue for transmitting the data packet to a destination port.

14. The apparatus of claim 13 including means for determining from the packet-related data which destination ports are to receive the packet-related data in the first stage queue.

16. The apparatus of claim 13 including address resolution logic sending the packet-related data from the sending port to the first stage queue.

17. The apparatus of claim 13 wherein the first stage queue includes multiple first queues, the data stored in a specific first queue based on a characteristic of the packet.

18. (Amended) The apparatus of claim 13 wherein each second stage queue includes multiple second queues, the data stored in a specific second queue based on the characteristic of the packet.

19. The apparatus of claim 13 wherein the switch fabric is a shared memory switch fabric for communicating data packets from sending ports to destination ports.

20. The apparatus of claim 13 wherein the switch fabric is a crossbar matrix for communicating data packets from sending ports to destination ports.

21. (Twice Amended) In a switching device, apparatus for communicating data packets from sending ports to destination ports, comprising:

means for storing in a first stage queue packet-related data from a sending port;

means for determining from the packet-related data which destination ports are to receive the packet-related data in the first stage queue;

means for storing in a second stage queue associated with each determined destination port the packet-related data from the first stage queue based on a characteristic of a packet; and

means for transmitting the packet-related data in the second stage queue to a switch fabric for completing the communication of the data packet from the sending port to each determined destination port.

22. In a switching device, a method for communicating data packets from sending ports to destination ports, the method comprising:

storing in a first stage queue a pointer to memory storing a data packet and a list of destination ports;

identifying a destination port stored in the first stage queue;

retrieving the pointer to memory stored in the first stage queue;

storing in a second stage queue associated with the identified destination port the retrieved pointer to memory; and

using the pointer to memory in the second stage queue to complete the communication of the data packet from the sending port to the identified destination port.